

### **ABSTRACT OF THE DISCLOSURE**

A method and an apparatus for estimating an amount of drawn air of a cylinder and a method and an apparatus for controlling the amount of drawn air, are presented. An estimated value of an amount of drawn air of the cylinder, based on intake manifold pressure, is multiplied by a value of an identification parameter obtained by an adaptive observer, to obtain a final estimated value of an amount of drawn air of the cylinder. An accurate estimated value in a transient state as well as an estimated value not oscillating in a steady state can be obtained. Accordingly, accuracy of air-fuel ratio control can be remarkably increased.